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Integrating Remediation and Restoration

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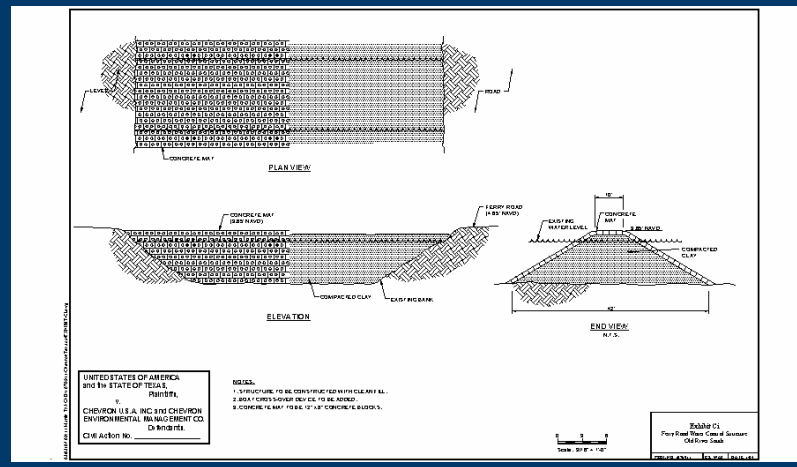
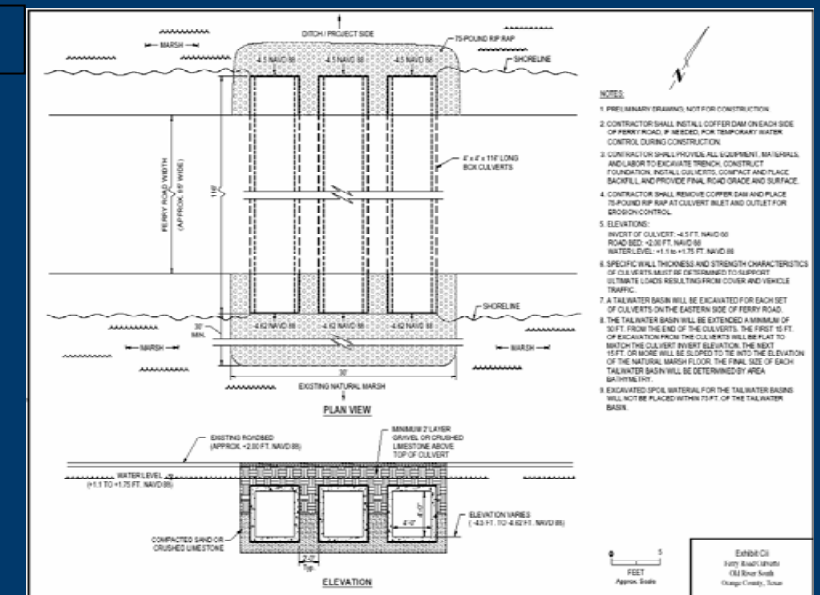
- Ecological liabilities documented through risk assessment, natural resource damage assessment, and/or wetland loss can be combined and addressed in a cost effective restoration action

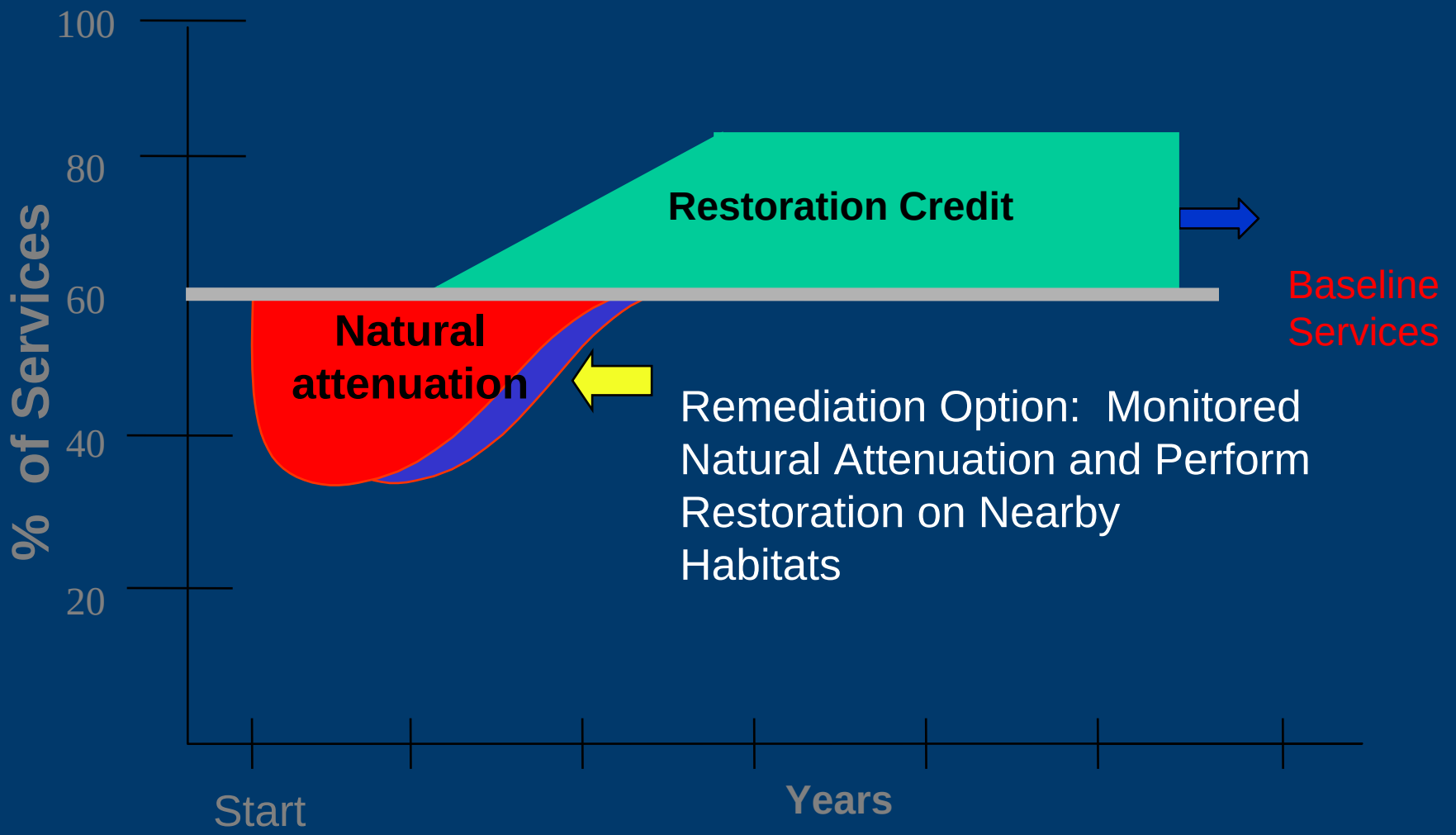




- Natural attenuation may reduce risk to acceptable levels

- Non-impacted natural resource areas, if preserved in perpetuity, can be used to offset ecological risk liabilities

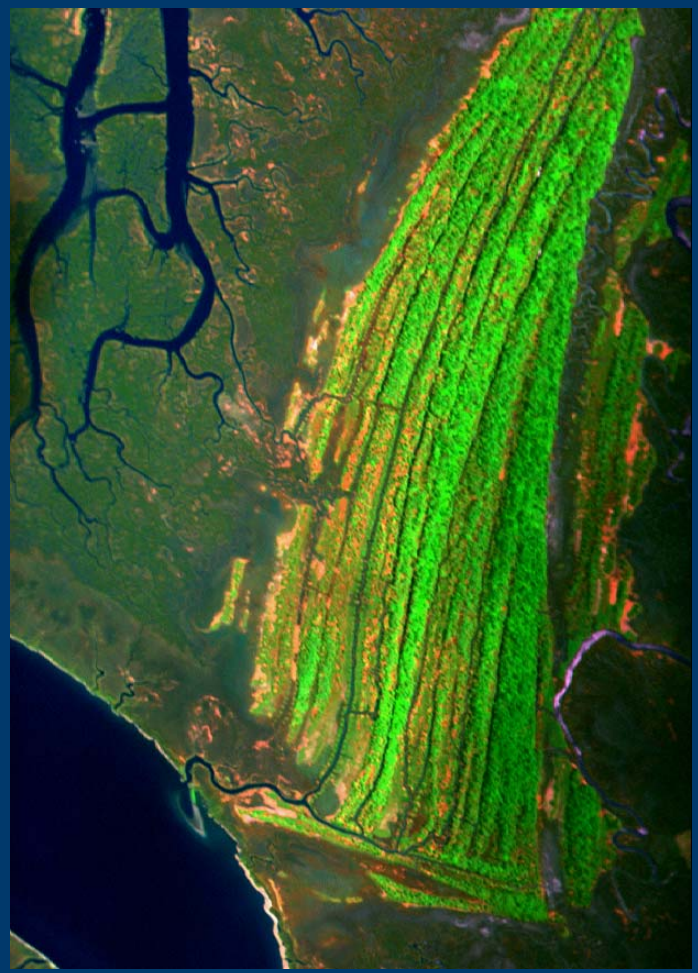
Restoration-Based Compensation Example Using Habitat Equivalency Analysis (HEA)



- Net Environmental Benefits Analysis (NEBA) demonstrates that a remedy can leave contamination in place and offset ecological liabilities via habitat acquisition, enhancement, and/or construction

Ecological Services Analysis (ESA) Option is NEBA Equivalent

- **NEBA evaluates ecological services lost due to potential active remedial actions**



- **Comparison to a scenario of foregoing active remediation in favor of natural attenuation**
- **Use Habitat Equivalency Analysis to quantify ecological service debits and credits**
- **Appropriate ecological compensation must offset risk left in place**
- **Can provide scientific basis for demonstrating that costly remedial/corrective actions may provide a "*cure that is worse than the disease*"**

Advantages of ESA/NEBA Option

- Produces a net environmental gain of ecological services (through restoration, conservation, and /or enhancement of unaffected habitat)
- Credible method to quantify, compare and demonstrate that one remedy is better for an ecosystem than another using site-specific metrics
- Can demonstrate when there is less ecological impact via natural attenuation than benefits associated with full-scale remediation